PROCEEDINGS

OF

THE ROYAL SOCIETY.

1839. No. 37.

February 14, 1839.

JOHN W. LUBBOCK, Esq., V.P. and Treas., in the Chair.

The Right Honourable Lord Carrington, was balloted for, and duly elected into the Society.

A paper was read, entitled, "Researches on the Chemical Equivalents of certain Bodies." By Richard Phillips, Esq., F.R.S.

The author examines, by a new series of experiments, the truth of the theory of Dr. Prout and Dr. Thomson, namely, that "all atomic weights are simple multiples of that of hydrogen," a theory which the late Dr. Turner had maintained is at variance with the most exact analytic researches, and consequently untenable. Although the experiments of Dr. Turner, and the inferences which he drew from them, agree very nearly with those of Berzelius, it still appeared to the author desirable to investigate this subject; and it occurred to him that the inquiry might be conducted in a mode not liable to some of the objections which might be urged against the processes usually employed.

Dr. Turner having adopted a whole number, namely 108, as the equivalent of silver, this substance was selected by the author as the basis of his inquiry into the equivalent numbers of chlorine, and some other elementary gases. It appeared to him that the chance of error arising from the fusing of the chloride of silver might be entirely removed, and other advantages gained, by experimenting on silver on a large scale, with such proportions of the substances employed as were deemed to be equivalents; and instead of calculating from the whole product of the fused chloride, to do it merely from the weight of such small portion only, as might arise from the difference between theoretical views and experimental results.

The author concludes, from the train of reasoning he applies to the series of experiments so undertaken, that no material, and even scarcely any appreciable error can arise from considering the equivalent numbers of hydrogen, oxygen, azote, and chlorine, as being 1, 8, 14, and 36 respectively.

A paper was also read, entitled, "Some Account of the Hurricane of the 7th of January, 1839, as it was experienced in the neighbourhood of Dumfries," in a letter addressed to P. M. Roget, M.D. Secretary to the Royal Society. By P. Garden, Esq. Communicated by Dr. Roget.